

## FIRE-RESISTANCE DESIGN

### Assembly Usage Disclaimer

#### **BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States**

#### **BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada**

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances

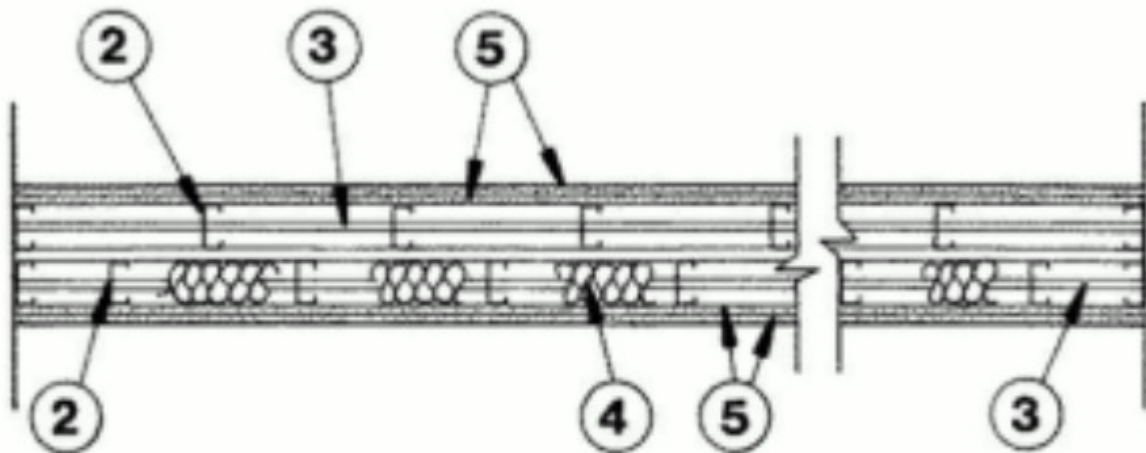
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

### Design No. W425

October 01, 2018

**Nonbearing Wall Rating — 1 or 2 Hr. (See Items 5, 5A, 5B, 5C, 5D, 5E)**

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



### HORIZONTAL SECTION

**1. Floor and Ceiling Runners —** (For use with Item 5) — Channel shaped, attached to floor and ceiling in two rows, a min 1 in. apart, with steel fasteners spaced 24 in. OC. Runners fabricated from min No. 25 MSG galv steel, 1-1/4 in. wide and 2-1/2 in. deep.

**1A. Floor and Ceiling Runners** — (As an alternate to Item 1, For use with Item 5A, 5B, 5C and 5D) — Channel shaped, attached to floor and ceiling in two rows, a min 1 in. apart. Runners fabricated from min No. 20 MSG galv steel, 1-3/16 in. wide and 2-9/16 in. deep.

**1B. Framing Members\* — Floor and Ceiling Runners** — (Not Shown, for use with Item 2B) — As an alternate to Item 1 - Channel shaped, min. 2-1/2 in. deep, attached to floor and ceiling with fasteners 24 in. OC. max.

**SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME D24/30EQD and Type SUPREME D20

**1C. Framing Members\* — Floor and Ceiling Runners** — (Not Shown) — As an alternate to Item 1 for a 2 hour rating only - For use with Item 2C, channel shaped, min 2-1/2 in. deep, attached to floor and ceiling with fasteners 24 in. OC. max.

**CLARKDIETRICH BUILDING SYSTEMS** — CD ProTRAK

**DMFCWBS L L C** — ProTRAK

**MBA METAL FRAMING** — ProTRAK

**RAM SALES L L C** — Ram ProTRAK

**STEEL STRUCTURAL PRODUCTS L L C** — Tri-S ProTRAK

**1D. Framing Members\* — Floor and Ceiling Runners** — (Not Shown, for use with Item 2D) — As an alternate to Item 1 - Channel shaped, min. 3-1/2 in. deep, fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners 24 in. OC. max.

**STEEL INVESTMENT GROUP L L C** — AlphaTRAK

**2. Steel Studs** — (For use with Item 5) — Channel shaped, supplied with cutouts, friction -fitted into floor and ceiling runners and spaced a max 24 in. OC. Studs cut 1/2 in. less than assembly height and evenly staggered between the two rows of floor and ceiling runners. Studs fabricated from min No. 25 MSG galv steel, min 2-1/2 in. deep by 1-5/8 in. wide with 3/8 in. folded back return flange legs.

**2A. Steel Studs** — (As an alternate to Item 2, For use with Items 5A, 5B, 5C and 5D) — Channel shaped, supplied with cutouts, friction -fitted into floor and ceiling runners and spaced a max 16 in. OC. Studs cut 1/2 in. less than assembly height and staggered flush against the floor runners. Studs fabricated from min No. 20 MSG galv steel, min 2-1/2 in. deep x 1-5/8 in. wide x 3/8 in. folded back return flange legs.

**2B. Framing Members\* — Steel Studs —** (As an alternate to Item 2) — Channel shaped studs, min. 2-1/2 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME D24/30EQD and Type SUPREME D20

**2C. Framing Members\* — Steel Studs —** (As an alternate to Item 2 for a 2 hour rating only) — For use with Item 1C, channel shaped studs, min 2-1/2 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**CLARKDIETRICH BUILDING SYSTEMS** — CD ProSTUD

**DMFCWBS L L C** — ProSTUD

**MBA METAL FRAMING** — ProSTUD

**RAM SALES L L C** — Ram ProSTUD

**STEEL STRUCTURAL PRODUCTS L L C** — Tri-S ProSTUD

**2D. Steel Studs —** (For use with Items 1D and 5) — Channel shaped, friction-fitted into floor and ceiling runners and spaced a max 24 in. OC. Studs cut 1/2 in. less than assembly height and evenly staggered between the two rows of floor and ceiling runners. Studs fabricated from min 0.018 in. thick galv steel, min 3-1/2 in. deep.

**STEEL INVESTMENT GROUP L L C** — AlphaSTUD

**3. Lateral Bracing —** The bracing shall be in accordance with the SSMA Technical Note Dated March 2000 Referencing Unsheathed Flange Bracing.

**3A. Lateral Bracing —** (Not Shown) — Right angle- shaped, supplied with notches spaced 12, 16, or 24 in. OC., friction-fitted to the cutouts in steel studs, supplied in 7/8 in. by 7/8 in. by 50 in. lengths. Lateral bracing bars fabricated from min. 20 MSG galvanized steel. The bracing shall be located a maximum of 5 ft on center in accordance with the manufacturers published literature.

**CLARKDIETRICH BUILDING SYSTEMS** — TradeReady Spazzer 9200 bar

**4. Batts and Blankets —** (Optional) — Glass fiber batts may be friction-fitted to completely fill the stud cavities on one or both rows of studs.

See **Batts and Blankets** category (BZJZ) for names of manufacturers.

**5. Gypsum Board\*** — For 1 hr rating (Vertical application) — One layer of 5/8 in. thick gypsum board applied vertically to studs with #6 x 1-1/4 in. long bugle head screws spaced 8 in. OC at the perimeter and 12 in. OC in the field of the boards. Vertical joints are centered over studs and staggered from vertical joints on opposite sides of the wall. For 1 hr rating (Horizontal application) — One layer of 5/8 in. thick gypsum board attached horizontally to studs with 1 in. long Type S bugle head screws spaced 8 in. OC.; and to floor and ceiling runners with 1 in. long Type S bugle head screws spaced 8 in. OC. with the 1st screw 2 in. from board edge. Horizontal joints need not be staggered on opposite faces or backed by steel framing. For 2 hr rating (Not shown) — Two layers of 5/8 in. thick gypsum board applied vertically. Inner layer attached to studs with #6 x 1 in. long bugle head screws spaced 12 in. OC along the top and bottom tracks and 16 in. OC in the field and along the vertical edges. Outer layer attached to studs with #6 x 1-5/8 in. long bugle head screws spaced 12 in. OC along the top and bottom tracks and 16 in. OC in the field and along the vertical edges. Vertical joints are centered over studs and staggered between layers and on opposite sides of the wall.

When **Steel Framing Members\*** (Item 7-7C) are used: For the 1-hr system, gypsum panels attached vertically to furring channels with 1 in. long Type S-12 screws spaced 12 in. OC. Vertical joints offset min 12 in. from layer on other side of wall. For the 2-hr system, inner layer of gypsum panels attached vertically to furring channels with 1 in. Type S-12 screws spaced 16 in. OC, outer layer with 1-5/8 in. Type S-12 screws spaced 12 in. OC. Inner layer to be applied vertically. Outer layer to be applied vertically with joints offset a minimum 12 in. from inner layer joints.

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C**  
— Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD

**5A. For 2 hr rating** — Two layers of 5/8 in. thick gypsum board applied horizontally. Inner layer attached to studs with #6 x 1 in. long bugle head screws spaced 12 in. OC along the top and bottom tracks and 16 in. OC in the field and along the vertical edges. Outer layer attached to studs with #6 x 1-5/8 in. long bugle head screws spaced 12 in. OC along the top and bottom tracks and 16 in. OC in the field and along the vertical edges. Vertical joints are centered over studs and staggered between layers and on opposite sides of the wall. Horizontal joints on the face layer are staggered 12 in. from the base layer. Horizontal joints need not be backed by steel framing.

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD

**5B. Gypsum Board\*** — (As an alternate to Item 5 may be used as the base layer on one or both sides of wall, For direct attachment only) — Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied

vertically. Vertical joints centered over min 20 MSG galvanized steel studs and staggered min 1 stud cavity on opposite sides of studs. See Item 2A. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 8) or Lead Discs or Tabs (see Item 9).

**RAY-BAR ENGINEERING CORP** — Type RB-LBG

**5C. Gypsum Board\*** — (As an alternate to Item 5 may be used as the base layer on one or both sides of wall, For direct attachment only) — Noml 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

**NEW ENGLAND LEAD BURNING CO INC, DBA NELCO** — Nelco

**5D. Gypsum Board\*** — (As an alternate to Item 5 may be used as the base layer on one or both sides of wall, For direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over min 20 MSG galvanized steel studs and staggered min 1 stud cavity on opposite sides of studs. See Item 2A. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

**RADIATION PROTECTION PRODUCTS INC** — Type RPP - Lead Lined Drywall

**5E. Gypsum Board\*** — (As an alternate to Item 5) — For Direct Application to studs Only- For use as the base layer on one or both sides of wall.. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grades "A, B,

C or D". Fasteners for face layer gypsum panels (Items 5) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 5.

**MAYCO INDUSTRIES INC** — "X-Ray Shielded Gypsum"

**6. Joint Tape and Compound** — (Not Shown) — Outer layer joints covered with joint compound and paper or mesh tape. Screw heads covered with joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges.

**7. Steel Framing Members\*** — (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 5. May not be used with items 5A, 5B, 5C, 5D or 5E.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7a) to studs (Item 2). Clips spaced max. 48 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.

**PAC INTERNATIONAL L L C** — Types RSIC-1, RSIC-1 (2.75).

**7A. Steel Framing Members\*** — (Optional, Not Shown) (Optional on one or both sides, not shown, for single or double layer systems.) Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 5. May not be used with items 5A, 5B, 5C, 5D or 5E.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7Aa) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.

**STUDCO BUILDING SYSTEMS** — RESILMOUNT Sound Isolation Clips - Type A237R

**7B. Steel Framing Members\*** — (Optional, Not Shown) (Optional on one or both sides, not shown, for single or double layer systems.) Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with a double strand of No. 18 AWG twisted steel wire. Gypsum board attached to furring channels as described in Item 5. May not be used with items 5A, 5B, 5C, 5D, or 5E.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7Ba) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

**REGUPOL AMERICA** — Type SonusClip

**7C. Steel Framing Members\*** — (Optional, Not Shown) (Optional on one or both sides, not shown, for single or double layer systems.) Resilient channels and Steel Framing Members as described below:

a. **Resilient Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5. May not be used with items 5A, 5B, 5C, 5D, or 5E.

b. **Steel Framing Members\*** — Used to attach resilient channels (Item 7Ca) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.

**KEENE BUILDING PRODUCTS CO INC** — Type RC+ Assurance Clip

**8. Lead Batten Strips** — (Not Shown, For Use With Item 5A) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5B) and optional at remaining stud locations. Required behind vertical joints.

**9. Lead Discs or Tabs** — (Not Shown, For Use With Item 5A) — Used in lieu of or in addition to the lead batten strips (Item 8) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5B) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

**10. Lead Batten Strips** — (Not Shown, For Use With Item 5B) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5C) and optional at remaining stud locations.

**11. Lead Tabs** — (Not Shown, For Use With Item 5B) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5C) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

**12. Lead Batten Strips** — (Not Shown, For Use With Item 5C) — Lead batten strips, min 2 in. wide, max 8 ft. long with a max thickness of 0.14 in. Strips placed on the exterior face of studs and attached with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5) and optional at remaining stud locations.

**13. Lead Discs or Tabs** — (Not Shown, For Use With Item 5C) — Used in lieu of or in addition to the lead batten strips (Item 3) or optional at other locations - Nom. 3/8 in. diam by max 0.085 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

**14. Lead Batten Strips** — (Not Shown, For Use With Item 5D) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grades "A, B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at remaining stud locations.

**15. Lead Discs** — (Not Shown, For Use With Item 5D) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.9% meeting the Federal Specification QQ-L-201f, Grades "A, B, C or D".



**16. Wall and Partition Facings and Accessories\*** — (Optional, Not Shown) — For use with Item 5 — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the steel framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type QuietRock QR-500 and QR-510

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2018-10-01

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### Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

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